MONTEREY BAY UNIFIED AIR POLLUTION CONTROL DISTRICT
TITLE V OPERATING PERMIT

24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (831) 647-9411

ISSUED TO:

Calpine King City Cogeneration, LLC
750 Metz Road
King City, CA 93930

PLANT SITE LOCATION:

750 Metz Road
King City, CA 93930

ISSUED BY:

Douglas Quetin, Air Pollution Control Officer _____ Date

Nature of Business: Cogeneration

SIC Code: 4931 - Electric & Other Services Combined

RESPONSIBLE OFFICIAL:

Name: Mr. Thomas R. Mason
Title: Executive Vice-President
Phone: (408) 995-5115

ALTERNATIVE RESPONSIBLE OFFICIAL:

Name: Mr. Rick Colgan
Title: Plant Manager
Phone: (831) 385-4090

FACILITY CONTACT PERSON:

Name: Mr. Rick Colgan
Title: Plant Manager
Phone: (831) 385-4090

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FACILITY DESCRIPTION

The King City Power Plant operated by Calpine King City Cogeneration, LLC is a combined cycle cogeneration unit. This facility produces most of the electricity through the expansion of fuel combusted (natural gas or fuel oil) in a gas turbine that is connected to a generator. Heat in the gas turbine exhaust is used to produce high-pressure steam in a heat recovery steam generator, which is used to produce additional electricity from a steam turbine/generator. Low pressure steam extracted from this system is used as process steam at the Basic Vegetable Product's plant. In addition, two auxiliary boilers are located at the facility and are used to provide process steam in order to maximize electrical power production from the steam turbine/generator during peak power production periods or when the gas turbine is not operating. This facility is presently permitted by the District's local permitting program under Permits to Operate (PTO) 10211, 10212, & 10213.

EQUIPMENT DESCRIPTION

COGENERATION FACILITY CONSISTING OF:

1a. Gas Turbine Generator, General Electric Frame 7, Model EA 7001, Rated At 941.1 MMBtu/Hr Maximum Heat Input And 85.7 MW Maximum Electrical Output, Steam Injection For NO_x Control, 5 Lbm H_2O/Lbm Fuel Design Midpoint.

1b. Water Tube Type Heat Recovery Steam Generator, Nooter/Eriksen, High Pressure Steam Capacity: 272,000 Lbs/Hr @ 1475 psia and 930°F, Low Pressure Steam Capacity: 87,900 Lbs/Hr @ 100 PSIA Saturated.

1c. Steam Turbine Generator, Asea-BBC Dual Admission, Dual Extraction, High Pressure Turbine Model HT-16, Low Pressure Turbine Model LT-25, Generator Model Brush BDAX 7-225ERH, 37.6 MW Rated Electrical Output.

1d. Condenser, Graham Manufacturing Model 79130, Water Cooled Shell And Tube Condenser Rated At 272 MMBtu/Hr.

1e. Cooling Tower, Hamon Cooling Towers, Three Cell Counterflow Cooling Tower Rated At 300 MMBtu/Hr, 24,000 GPM Rating, Drift Loss: 0.002%.

1f. Selective Catalytic Reduction NO_x Control System, Mitsubishi Heavy Industries Titanium Oxide Grid Honeycomb Type Catalyst, 1846 Cubic Feet Of Catalyst, Consisting Of: Twenty Eight Vertically Stacked Catalyst Modules, Each Holding 200 Ceramic Blocks Containing The Active Catalyst, Each Block Measuring 6" x 6" x 16", With 5 mm Catalyst Pitch.

1g. Ammonia Injection System Consisting Of: Two Ammonia Dilution Blowers, Each 10 Hp, 700 SCFM @ 40" W.G. Static Pressure, Combining Anhydrous Ammonia And Dilution Air; Ammonia Injection Grid With Thirty 2 Inch Distribution Pipes Configured Vertically Across The Duct, Each With Twenty Four Injection Nozzles.

2. Two Nebraska Model NS-F-86 Water Tube Boilers, Each Designed To Produce 121,120 Lbs/Hr Saturated Steam at 170 PSIG, Each With Coen Model 275 Type DAF Multi-Staged Low NO_x Burners Designed For A Maximum Heat Input Of 143 MMBtu/Hr And Two Stage Flue Gas Recirculation With A Design Rate Of 15%, And CO Control Provided By An Engelhard Catalytic Carbon Monoxide Converter With 21.24 Cubic Feet Of Ceramic Honeycomb Type Precious Metal Coated Catalyst Consisting Of Twelve Catalyst Modules, Each Measuring 24.5" x 24.5" x 6.4" Located Between The Boiler Flue Gas Outlet And Economizer Inlet On Each Boiler.

PERMIT SHIELD

Compliance with the conditions contained on this Title V permit shall be deemed compliance with the following applicable requirements as of the date of issuance of this permit based upon the criteria following each applicable requirement:

40 CFR Part 60, Subpart A - New Source Performance Standards, General Provisions
This facility is subject to the requirements of this part because they are subject to 40 CFR Part 60, Subparts Db and GG. In their Title V application, the source has requested that the requirements of Subpart A be subsumed under the NSR permit requirements.

The District agrees, and asserts that compliance with the conditions on this Title V Permit shall be deemed compliance with the monitoring, record keeping, and reporting requirements contained in 40 CFR Parts 60.7, 60.8, and 60.13.

40 CFR Part 60, Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units
The boilers at the facility are subject to the requirements of this part. In their Title V application, the source has requested that the requirements of Subpart Db be subsumed under the NSR permit requirements. This is an appropriate action, due to the fact that facility has emission limits from their NSR permits which are more stringent than the requirements of this part.

The sulfur dioxide limit from Section 60.42b(a) would be 11.4 lbs/hr (143 MMBtu/Hr * 0.8 lb/MMBtu * 0.1). This 11.4 lbs/hr exceeds the 7.55 lbs/hr allowed for each boiler under the NSR permits.

The particulate matter limit from Section 60.43b(b) would be 14.3 lbs/hr (143 MMBtu/Hr * 0.1 lb/MMBtu). Low sulfur fuel requirement (0.05%) is the conventional technology utilized to reduce SO_x emissions and establishes the appropriate particulate matter emission limit from Section 60.43b. The allowance of 14.3 lbs/hr of particulate matter under subpart Db exceeds the 12.65 lbs/hr allowed for each boiler under the NSR permits.

The NO_x limit from Section 60.44b(a) would be 28.6 lbs/hr (143 MMBtu/Hr * 0.2 lb/MMBtu). The emission factor for high heat release rate is utilized based upon the furnace volume of 1795 ft^3 and a heat input of 143 MMBtu/hr. The heat release rate is 79,666 BTU/hr-ft^3 which under the definition contained in Section 60.41b is considered a "high heat release rate". The allowance of

28.6 lbs/hr of NO_x under subpart Db exceeds the 13.8 lbs/hr allowed for each boiler under the NSR permits.

The testing, monitoring, record keeping and reporting requirements contained in Sections 60.45(b), 60.46(b), 60.47(b), 60.48(b), and 60.49(b) will be subsumed under the testing, monitoring, record keeping and reporting requirements established under the NSR permits and required under the Title V permitting process.

40 CFR Part 60, Subpart GG - Standards of Performance for Stationary Gas Turbines
This gas turbine at this facility is subject to the requirements of this NSPS. In addition to the backend control using SCR, the turbine utilizes steam/water injection to control NO_x formation.

The NO_x emission factor from Section 60.332(a)(1) would be 113 ppmvd. This 113 ppmvd limit far exceeds the 9 ppmvd limit on natural gas (15 ppmvd on fuel oil) established by District Rule 207. Therefore, the NO_x limit from the NSPS will be subsumed under the NSR permit requirements included on this Title V permit.

The SO_2 limit from Section 60.333 would be 150 ppmv. Compliance with this limit is assumed due to the worst case limits contained in the facility NSR permits (firing on fuel oil) of 116.1 lbs/hr for the gas turbine. The SO_2 concentration at this permitted emission level would be 23.8 ppmv for the turbine [(116.1 lbs SO_2/hr)*((MM lbmoles air)/(64.1 lbmole SO_2))*((379 Ft3 Air)/(lbmole air))/((480,600 SDCFM)*(60 M/Hr)) = 23.8 ppmv]. This value is well below the 150 ppmv SO_2 allowed for in the NSPS. Therefore, the SO_2 emission standard from this NSPS will be subsumed under the NSR permit requirement that is included on this Title V permit.

The testing and monitoring requirements contained in Sections 60.334 and 60.335 will be subsumed under the testing and monitoring requirements established under the NSR permits and that is included on this Title V permit. This will include the annual emissions testing requirement and the requirement to monitor operations with the use of CEMs.

FEDERALLY ENFORCEABLE EMISSION LIMITS AND STANDARDS

1. The gas turbine pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits [District Rule 207; District Rule 403 limit of 617.9 lbs PM_{10}/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO_2 limit of 2000 ppmv]:

Pollutant	Lbs/Hour	Lbs/Day
Oxides of Nitrogen (NO_x)	30.1	722
Carbon Monoxide (CO)	20.0	480
Ammonia (NH_3)	13.9	334
Particulate Matter <10 microns (PM_{10})	2.5	60
Non-methane Hydrocarbons (NMHC)	1.0	24
Sulfur Dioxide (SO_2)	0.5	12

These limits shall not apply during start-up, which is not to exceed five (5) hours, or shutdown,

which is not to exceed two (2) hours, or during periods of oil firing. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

2. During periods of natural gas firing, the auxiliary boiler pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits from each boiler [District Rule 207; District Rule 403 limit of 30.8 lbs PM_{10}/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO_2 limit of 2000 ppmv; 40 CFR Part 60, Subpart Db SO_2 limit of 11.4 lbs/hr, PM_{10} limit of 14.3 lbs/hr, and NO_x limit of 28.6 lbs/hr]:

Pollutant		Lbs/Hour
Oxides of Nitrogen (NO_x)		7.25
Carbon Monoxide (CO)	2.65	
Particulate Matter <10 microns (PM_{10})	0.60	
Non-methane Hydrocarbons (NMHC)		0.20
Sulfur Dioxide (SO_2)		0.085

These limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start-up, for a period not to exceed three (3) hours, or during hot start-up, for a period not to exceed 30 minutes. During boiler shutdown or start-up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

3. While firing on natural gas the emission concentration of oxides of nitrogen, as NO_2, in the turbine exhaust discharged to the atmosphere shall not exceed 9 ppmvd, calculated at 15 percent O_2, dry. [District Rule 207; District Rule 404 NO_x limit of 200 ppm; 40 CFR Part 60, Subpart GG NO_x limit of 200 ppm]

This limit shall not apply during start-up, which is not to exceed five (5) hours, or shutdown, which is not to exceed two (2) hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

4. During periods of natural gas firing, the emission concentration of oxides of nitrogen, as NO_2, in the auxiliary boiler exhaust discharge to the atmosphere shall not exceed 40 ppmvd at boiler loads greater than 40 percent and 100 ppmvd at boiler loads of 40 percent or less, calculated as a one hour average at 3 percent O_2, dry. [District Rule 207; District Rule 404 NO_x limit of 350 ppm]

These limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start-up, for a period not to exceed three (3) hours, or during hot start-up, for a period not to exceed 30 minutes. During boiler shutdown or start-up, and during operations at or below 40 percent load, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

5. The emission concentration of ammonia in the turbine exhaust discharged to the atmosphere

shall not exceed 10 ppmvd, calculated at 15 percent O_2, dry. [District Rule 207]

6. The emission concentration of carbon monoxide in the turbine exhaust discharged to the atmosphere shall not exceed 10 ppmvd, calculated at 15 percent O_2, dry. [District Rule 207]

   This limit shall not apply during start-up, which is not to exceed five (5) hours, or shutdown, which is not to exceed two (2) hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

7. The annual emissions from the gas turbine shall not exceed 130 tons per year of NO_x and 82 tons per year of CO. [District Rule 207]

8. The turbine and auxiliary boilers shall only be fired on natural gas, except that No. 2 fuel oil may be used during training/testing of the auxiliary boilers, as described in Condition 20, or during periods of natural gas curtailment by the utility, or in the events of natural gas supply malfunction or disruption not within the control of Calpine King City Cogen, LLC. In any event, No. 2 fuel oil shall not be used for more than 240 hours per year per piece of equipment. [District Rule 207]

9. During periods of No. 2 fuel oil firing, the gas turbine pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits [District Rule 207; District Rule 403 limit of 617.9 lbs PM_{10}/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO_2 limit of 2000 ppmv]:

Pollutant	Lbs/Hour		Lbs/Day	
Sulfur Dioxide (SO_2)		116.4		2786
Oxides of Nitrogen (NO_x)		47.8		1147
Carbon Monoxide (CO)	22.0		528	
Ammonia (NH_3)		13.9		334
Particulate Matter <10 microns (PM_{10})	10.0		240	
Non-methane Hydrocarbons (NMHC)		1.0		24

   These limits shall not apply during start-up, which is not to exceed five (5) hours, or shutdown, which is not to exceed two (2) hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

10. During periods of No. 2 oil firing, the auxiliary boiler pollutant mass emission rates in the exhaust discharged to the atmosphere shall not exceed the following limits from each boiler [District Rule 207; District Rule 403 limit of 30.8 lbs PM_{10}/hr; District Rule 404 NO_x limit of 140 lbs/hr and SO_2 limit of 2000 ppmv; 40 CFR Part 60, Subpart Db SO_2 limit of 11.4 lbs/hr, PM_{10} limit of 14.3 lbs/hr, and NO_x limit of 28.6 lbs/hr]:

Pollutant	Lbs/Hour
Oxides of Nitrogen (NO_x)	13.8

Particulate Matter <10 microns (PM_{10})		12.65
Sulfur Dioxide (SO_2)		7.55
Carbon Monoxide (CO)	2.85	
Non-methane Hydrocarbons (NMHC)		0.25

These limits shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start-up, for a period not to exceed three (3) hours, or during hot start-up, for a period not to exceed 30 minutes. During boiler shutdown or start-up procedures, incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

11. While firing on No. 2 fuel oil, the emission concentration of oxides of nitrogen, as NO_2, in the turbine exhaust discharged to the atmosphere shall not exceed 15 ppmvd, calculated at 15 percent O_2, dry. [District Rule 207; District Rule 404 NO_x limit of 200 ppm; 40 CFR Part 60, Subpart GG NO_x limit of 200 ppm]

    This limit shall not apply during start-up, which is not to exceed five (5) hours, or shutdown, which is not to exceed two (2) hours. SCR catalytic controls, steam injection and good engineering practices shall be used to the fullest extent practical during start-up to minimize pollutant emissions.

12. During periods of No. 2 fuel oil firing at boiler loads greater than 40 percent, the emission concentration of oxides of nitrogen, as NO_2, in the auxiliary boiler exhaust discharged to the atmosphere shall not exceed 69 ppmvd, calculated as a one hour average at 3 % O_2, dry. [District Rule 207]

    This limit shall not apply during boiler shutdown, for a period not to exceed 30 minutes, or during cold start-up, for a period not to exceed three (3) hours, or during hot start-up, for a period not to exceed 30 minutes. During boiler shutdown or start-up, procedures incorporating good engineering practices shall be utilized to the fullest extent practical to minimize all pollutant emissions.

13. The sulfur content on any No. 2 fuel oil used as fuel in the turbine or auxiliary boilers shall not exceed 0.05 percent by weight. All fuel received must be certified to contain 0.05 percent sulfur, or less, by weight. [District Rule 207, District Rule 412 limit of 0.5% by weight sulfur]

14. The turbine shall undergo no more than one cold start-up and one shutdown per day. [District Rule 207]

15. Calpine King City Cogen, LLC shall maintain a turbine start-up protocol for both hot and cold start-up, which details the procedures that will be used to minimize the pollutant emissions, and shall amend this protocol based on operating experience. [District Rule 207]

16. The gas turbine and the auxiliary boilers must not be operated simultaneously for more than 6 full-load equivalent hours during any 24 hour period. [District Rule 207}

17. The total emissions from the operation of all combustion equipment at this facility shall not exceed the following limits while firing natural gas: [District Rule 207]

Quarter	NO_x	SO_x	PM_{10}	VOC	CO
First	65,392	1,035	5,425	2,170	42,953
Second	66,118	1,047	5,485	2,194	43,431
Third	66,845	1,059	5,545	2,218	43,908
Fourth	66,845	1,059	5,545	2,218	43,908
Annual	265,200	4,200	22,000	8,800	174,200

Note: During permitted periods of oil firing, the allowable emissions are increased by the incremental hourly limit for oil firing versus the natural gas hourly limit for all hours the equipment was actually operated on fuel oil.

18. Training/testing of the auxiliary boilers shall be allowed only under the following conditions [District Rule 207]:

a. Only one boiler may be tested in a calendar day,

b. The District shall be notified a minimum of 30 calendar days prior to the date of training/testing on No. 2 fuel oil,

c. The District has the authority to postpone training/testing of the auxiliary boilers due to adverse ambient air-quality conditions,

d. Each boiler may be used for training/testing on fuel oil a maximum of two (2) times per calendar year, and

e. The training/testing on fuel oil shall not exceed two (2) full-load equivalent hours.

19. Operation must be conducted in compliance with all data and specifications submitted in the application to the California Energy Commission and the MBUAPCD. [District Rule 207]

20. Equipment must be properly maintained and kept in good operating condition. [District Rule 207]

21. Equipment shall not be operated unless the air pollution control equipment is in full use. [District Rule 207]

22. The PM_{10} emissions from the cooling tower shall not exceed 20 pounds per day. [District Rule

207]

23. Water treatment chemicals containing chromium shall not be used in the cooling tower. [District Rule 207, 40 CFR Part 63.400]

24. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three (3) minutes in any one (1) hour which is as dark or darker than Ringelmann 1 or equivalent 20% opacity. [District Rule 400]

25. Calpine King City Cogen, LLC shall cause to be operated an ambient air monitoring station at a site approved by the District in Southern Monterey County, for PM_{10}, O_3, and standard meteorological parameters on a continuous basis, in accordance with EPA requirements contained in 40 CFR Part 58, and as deemed necessary in accordance with the Air Resources Board guidelines. The air monitoring station instrumentations shall be compatible with the District's daily data retrieval polling methods.

    The operation of the air monitoring station shall continue for the life of the project or until the Air Pollution Control Officer determines that good cause exists to discontinue monitoring. Good cause includes adequate technical justification submitted by the permittee that successfully proves that the continuation of all or part of the monitoring requirement is no longer necessary. [District Rule 207]

26. Calpine King City Cogen, LLC shall comply with the requirements of 40 CFR Part 68 - Risk Management Plans. Calpine King City Cogen, LLC shall submit a Risk Management Plan (RMP) by June 21, 1999, or other dates specified in 40 CFR Part 68.10. Calpine King City Cogen, LLC shall certify compliance with these requirements as part of the annual compliance certification required by 40 CFR Part 70 and this permit. [40 CFR Part 68]

27. Calpine King City Cogen, LLC shall comply with the requirements of 40 CFR Part 82 - Protection of Stratospheric Ozone. [40 CFR Part 82]

TESTING REQUIREMENTS AND PROCEDURES

28. An annual performance test of the turbine shall be conducted prior to January 1 of each year. Calpine King City Cogen, LLC shall conduct performance tests in accordance with EPA Method 20 for NO_x and O_2, EPA Method 10 for CO, EPA Method 18 for hydrocarbons, the collection method specified in BAAQMD Method 1B and the analysis specified in EPA Method 350.3 for ammonia to verify compliance with conditions 1, 3, 5, and 6. Calpine King City Cogen, LLC shall furnish the District written results of such performance tests within thirty (30) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be

provided so that a District observer can be present. The compliance test shall include, but not be limited to, the determination of the following parameters [District Rule 207]:

a. Oxides of Nitrogen, as NO_2: ppm at 15% O_2, dry and lb/hr.

b. Carbon Monoxide: ppm at 15% O_2, dry and lb/hr.

c. Ammonia: ppm at 15% O_2, dry and lb/hr.

d. Non-methane hydrocarbons: ppm and lb/hr.

and the following process parameters:

e. Natural gas consumption.

f. Electricity generated during the test.

g. Ammonia injected, NH_3/NO_x mole ratio, and lb/hr.

h. Steam/water injection rate and steam/water to fuel ratio.

29. An annual performance test of the auxiliary boilers shall be conducted prior to January 1 of each year. Calpine King City Cogen, LLC shall conduct performance tests in accordance with EPA Method 7E for NO_x, EPA Method 10 for CO, EPA Method 3A for O_2 to verify compliance with conditions 2 and 4. Calpine King City Cogen, LLC shall furnish the District written results of such performance tests within thirty (30) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 10 days prior to the actual date of testing shall be provided so that a District observer can be present. The compliance test shall include, but not be limited to, a test of the exhaust gas in the auxiliary boiler exhaust stacks, for [District Rule 207]:

a. Carbon Monoxide: ppm at 15% O_2, dry and lb/hr;

b. Oxides of Nitrogen, as NO_2: ppm at 15% O_2, dry and lb/hr;

and the following process parameter:

c. Natural gas consumption rate.

30. No testing is specified for the emission limitations contained in conditions 9, 10, 11 and 12 while firing on fuel oil. Fuel oil is for emergency use only, and the District has no intention of the facility operating the equipment on fuel oil just to perform compliance testing.

31. Testing to determine the ammonia mass emission rate in the HRSG exhaust stack shall be conducted on a semi-annual basis, prior to January 1 and July 1 of each year. Calpine King City Cogen, LLC shall conduct these performance tests in accordance with the collection method specified in BAAQMD method 1B and the analysis specified in EPA method 350.3, and

MBUAPCD test procedures to verify compliance with condition 5. Calpine King City Cogen, LLC shall furnish the District written results of such performance tests within thirty (30) days of the test completion. A testing protocol shall be submitted to the District no later than 30 days prior to testing, and District notification at least 7 days prior to the actual date of testing shall be provided so that a District observer can be present. [District Rule 207]

32. Testing of all fuel oil delivered to the facility shall be conducted prior to or upon receipt of the fuel oil. Calpine King City Cogen, LLC shall conduct testing in accordance with ASTM D1552-83 or ASTM D1552-83 to verify compliance with condition 13. Calpine King City Cogen, LLC shall furnish the District written results of the test prior to firing the fuel oil, but in no case later than thirty (30) days of completion.

33. Calpine King City Cogen, LLC shall conduct monthly measurements of the cooling tower water total dissolved solids in accordance with EPA Method 160.1 to verify compliance with the cooling tower PM_{10} emission limit as specified in condition 24. The PM_{10} emissions shall be calculated as the product of the cooling tower recirculating water flow rate times the total dissolved solids in the cooling water times the cooling tower drift loses, as follows [District Rule 207]:

PM_{10} lb/day = 0.012 x F x TDS x DL

where: F = cooling tower recirculation water flow rate

TDS = total dissolved solids in the cooling water

DL = drift loss = 0.002 percent

34. No testing is specified for the generic (Rule 400) opacity requirement from condition 26 while firing on natural gas. When firing on fuel oil continuously for a period of 120 hours and at intervals of seven (7) days during continuing operation on fuel oil , Calpine King City Cogen, LLC shall conduct testing in accordance with the methodology contained in EPA Method 9 and the averaging/aggregating period contained in District Rule 400 to verify compliance with condition 26.

MONITORING AND RECORD KEEPING REQUIREMENTS

35. A continuous emission monitoring system must be calibrated and operated to measure the Heat Recovery Steam Generator (HRSG) exhaust stack for NO_x, CO and O_2. The system shall continuously record the NO_x and CO concentrations corrected to a value of 15 percent O_2, dry, and the NO_x and CO mass emission rates in pounds per hour. The system shall meet all the requirements of Rule 213 and shall be certified at least once per year. [District Rule 207; District Rule 213]

36. A continuous monitoring system must be operated to monitor and record the mole ratio of injected ammonia to HRSG exhaust stack NO_x. This system must be accurate to within ± 5 percent. [District Rule 207]

37. A continuous monitoring system must be operated to monitor and record the fuel consumption and the mass ratio of steam to fuel being fired in the turbine. This system must be accurate to within ± 5 percent. [District Rule 207; 40 CFR Part 60, Subpart GG]

38. Continuous emission monitoring systems must be calibrated and operated to measure each auxiliary boiler exhaust for NO_x, CO and O_2. The system shall continuously record the NO_x and CO concentrations corrected to a value of 3 percent O_2, dry, and the NO_x and CO mass emission rates in pounds per hour. The system shall meet all the requirements of Rule 213 and shall be certified at least once per year. [District Rule 207; District Rule 213]

39. Instrumentation must be operated to measure the SCR catalyst inlet temperature and pressure differential across the SCR catalyst. [District Rule 207]

40. Instrumentation must be operated to measure the auxiliary boiler oxidation catalyst inlet temperature and pressure differential across the oxidation catalyst. [District Rule 207]

41. Calpine King City Cogen, LLC shall monitor and record all start-up, shutdown, and operational profiles in a log maintained on site. [District Rule 207]

42. Calpine King City Cogen, LLC shall submit to the Air Pollution Control District a written report each month which shall include [District Rule 207]:

    a. time intervals, date, and magnitude of excess emissions;

    b. nature and cause of the excess emission, and corrective actions taken;

    c. time and date of each period during which the continuous monitoring system was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; and

    d. a negative declaration when no excess emissions occurred.

43. Calpine King City Cogen, LLC shall monitor and record all periods of oil firing in a log maintained on site and shall submit a summary of this data on an annual basis, at renewal time of the District (non Title V) Permit to Operate. [District Rule 207]

44. Calpine King City Cogen, LLC shall submit to the Air Pollution District upon request at the time of annual District (non Title V) Permit to Operate renewal, the annual natural gas fuel consumption,

annual electricity generated, and annual emissions of NO_x, CO, NMHC, and ammonia from this equipment for the preceding calendar year. [District Rule 207]

45. As applicable Calpine King City Cogen, LLC shall maintain the following general records of required monitoring information [District Rule 218]:

A) the date and time of sampling or measurements;
B) the date(s) analyses were performed;
C) the company or entity that performed the analyses;
D) the analytical techniques or methods used;
E) the results of such analyses;
F) the operating conditions existing at the time of sampling or measurement; and
G) the records of quality assurance for continuous monitoring systems (including, but not limited to quality control activities, audits, and calibration drift checks) and source testing methods.

46. Calpine King City Cogen, LLC shall maintain records on the occurrence and duration of any start-up, shutdown, or malfunction in the operation of the equipment under this permit. [District Rule 218]

47. Calpine King City Cogen, LLC shall retain records of all required monitoring data and support information for a period of at least five (5) years from the date of the monitoring, sample collection, measurement, report, and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. [District Rule 218]

REPORTING REQUIREMENTS

48. Calpine King City Cogen, LLC shall report breakdowns which results in the inability to comply with any emission standard or requirement contained on this permit to the Air Pollution Control Officer (APCO) within one hour of the occurrence, this one hour period may be extended up to six hours for good cause by the APCO. The APCO may elect to take no enforcement action if Calpine King City Cogen, LLC demonstrates to the APCO's satisfaction that a breakdown condition exists.

The estimated time for repair of the breakdown shall be supplied to the APCO within twenty-four (24) hours of the occurrence and a written report shall be supplied to the APCO within five (5) days after the occurrence has been corrected. This report shall include at a minimum [District Rule 214]:

A) a statement that the condition or failure has been corrected and the date of correction; and

B) a description of the reason(s) for the occurrence; and

C) a description of the corrective measures undertaken and/or to be undertaken to avoid such an occurrence in the future; and

D) an estimate of the emissions caused by the condition or failure.

49. Calpine King City Cogen, LLC shall submit monthly reports to the District, in a District approved format, within 30 days from the end of the month and these shall include [District Rules 207, 213 & 218]:

A) the time intervals, date and magnitude of excess emissions, nature and cause of the excess (if known), corrective actions and preventative measures adopted; and

B) the averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard for the pollutant in question; and

C) time and date of each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of system repairs and adjustments; and

D) all information pertaining to any monitoring as required by the permit; and

E) a negative declaration specifying when no excess emissions occurred; and

F) a summary of actual monthly emissions from the CEM for all equipment which operated.

50. Calpine King City Cogen, LLC shall submit the total quarterly emissions, to verify compliance with Condition 17, to the District within 30 days from the end of each calendar quarter. [District Rule 207]

The total quarterly emissions for NO_x and CO shall be reported based upon the actual recorded CEM data. Quarterly emissions of SO_x (as SO_2), PM_{10}, and VOC (as methane) shall be reported as follows:

Volume of Natural Gas consumed in Quarter x Emission Rate[1] + Start/Stop Increment[2]

Notes: [1] - As established in the latest source test.
[2] - Start/Stop Increment for each event is:

Pollutant	Hot Start (lbs)	Cold Start (lbs)	Shutdown (lbs)
NO_x	27.8	381.8	22.9
CO	59.5	149.4	41.3
VOC	0.8	1.5	1.5

51. Calpine King City Cogen, LLC shall submit an annual compliance certification report to the District and U.S. EPA, in a District approved format, no later than February 15 for the period of January 1 through December 31 of the preceding year. [District Rule 218]

This report shall include a written statement from the responsible official which certifies the truth, accuracy, and completeness of the report and shall include at a minimum:

A) identification of each term or condition of the permit that is the basis of the certification; and

B) the compliance status; and

C) whether compliance was continuous or intermittent; and

D) the method(s) used for determining the compliance status of the source, currently and over the reporting period.

GENERAL CONDITIONS

52. Calpine King City Cogen, LLC shall comply with all conditions of this federal operating permit. Any noncompliance with a permit condition constitutes a violation of the Federal Clean Air Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. [District Rule 218]

53. In an enforcement action, the fact that Calpine King City Cogen, LLC would have to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit is not a defense. [District Rule 218]

54. This permit may be modified, revoked, reopened and reissued, or terminated for cause as determined by the District. The filing of a request by Calpine King City Cogen, LLC for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [District Rule 218]

55. This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. [District Rule 218]

56. Calpine King City Cogen, LLC shall furnish to the District, within a reasonable time, any information that the District may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit, or to determine compliance with the

permit. Upon request, Calpine King City Cogen, LLC shall also furnish to the District copies of records required to be retained by this permit. [District Rule 218]

57. For applicable requirements that will become effective during the permit term, Calpine King City Cogen, LLC shall meet such requirements on a timely basis unless a more detailed schedule is expressly required by the applicable requirement. [District Rule 218]

58. Any document submitted to the District pursuant to this permit shall contain certification by the responsible official of truth, accuracy and completeness. All certifications shall state that based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Calpine King City Cogen, LLC shall promptly, upon discovery, report to the District a material error or omission in these records, reports, plans, or other documents. [District Rule 218]

59. Calpine King City Cogen, LLC shall report any violation of any requirement contained in this permit to the District within 96 hours after such occurrence. The violation report shall include the time intervals, date and magnitude of excess emissions; nature and cause of the excess (if known), corrective actions and preventive measures adopted. [District Rule 218]

0. Upon any administrative or judicial challenge, all the emission limits, specific and general conditions, monitoring, record keeping, and reporting requirements of this permit, except those being challenged, remain valid and must be complied with. [District Rule 218]

61. For this federal operating permit to remain valid through the permit term of five years from the date of issuance, Calpine King City Cogen, LLC shall pay an annual emission fee based upon the requirements of District Rule 308. [District Rule 218]

62. Calpine King City Cogen, LLC shall have available at the facility at all times a copy of this federal operating permit. [District Rule 218]

63. For protection from enforcement action based upon an emergency, as defined in District Rule 218, the responsible official for Calpine King City Cogen, LLC shall submit to the District relevant evidence which demonstrates [District Rule 218]:

A) an emergency occurred; and

B) that Calpine King City Cogen, LLC can identify the cause(s) of the emergency; and

C) that the facility was being properly operated at the time of the emergency; and

D) that all steps were taken to minimize the emissions resulting from the emergency; and

E) within two working days of the emergency event, Calpine King City Cogen, LLC provided the District with a description of the emergency and any mitigating or corrective actions taken.

64. Upon presentation of credentials, Calpine King City Cogen, LLC shall allow the District, the ARB, the EPA, or an authorized representative, to perform the following [District Rule 218]:

A) enter upon the premises where the federal operating permit source is located or in which any records are required to be kept under the terms and conditions of this federal operating permit;

B) to have access to and copy any records required to be kept under the terms and conditions of this federal operating permit;

C) to inspect any equipment, operation, or process described or required in this federal operating permit; and,

D) to sample emissions from the source.

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